UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,355	01/10/2002	Akira Kagami	36992.00092 (HAL-ID-205)	8200

30256 7590 09/25/2006

SQUIRE, SANDERS & DEMPSEY L.L.P
600 HANSEN WAY
PALO ALTO, CA 94304-1043

EXAMINER	
DOAN, DUYEN MY	

ART UNIT	PAPER NUMBER
2152	

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/044,355	KAGAMI ET AL.	
	Examiner	Art Unit	
	Duyen M. Doan	2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to the applicant's submission filed on 6/23/06.

Claims 1-20 are amended for examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davies et al (us 2003/0088658) (hereinafter Davies) and Mercier et al (us 2003/0005119) and further in view of Todd et al (us 2003/0115073) (hereinafter Todd).

As regarding claim 4, Davies discloses at least one storage subsystem (see pg.3, par 28-29; pg.4, par 31-36, 38-41, also see Fig.1, storage RAIDS 156); a switch, operative to connect the at least one storage subsystem to one or more host computers (see pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1, SAN switch 116); wherein: the storage subsystem, the SIoD center system computer, and the switch are interconnected to share information (see pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1, SAN switch

connected to the network storage system); the SIoD center system computer receives input of a request for establishing a logical data I/O path between the at least one storage subsystem and one or more host computers via the switch (see pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1, SAN switch act as the middle man between the clients and the network storage system); the SIoD center system computer forwards the request to the switch; the switch establishes a connection between at least two ports, including a first port and a second port, the first port being connectable to a host computer, and the second port being connected to the at least one storage subsystem (see pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1, SAN switch act as the middle man between the clients and the network storage system); and at least one of the storage subsystem, the SIoD center system computer (see pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1, SAN switch act as the middle man between the clients and the network storage system, network storage system included the host controller and the storage RAIDS).

Davies does not disclose the switch makes account information based on at least upon a number of ports assigned.

Mercier teaches the switch makes account information based on at least upon a number of ports assigned (see Mercier pg.2 par 14-15; pg.3-4 par 39).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to combine the teaching of Mercier to the system of Davies to make account information base upon a number of ports assigned, because by making

account information base upon a number of ports assigned would provide effective way to manage the SAN and provide accurate billing information for the customer base on the actual storage used by the customer (see pg.1, par 7-9; pg.2 par 15).

The combination of Davies and Mercier does not disclose the storage on demand.

Todd, on the other hand, teaches storage on demand (see Todd pg.3, par 0029).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to combine incorporate the storage on demand of Todd to the method of Davies-Mercier, because by having the storage on demand would allow allocating resource in a controlled fashion, fully utilizing the resources (see Todd pg.3 par 0029).

As regarding claim 5, Davies-Mercier-Todd discloses the account information comprises at least one of: payment information to one or more vendors, the vendors providing at least one of: storage subsystem access, network access, and SAN switch access; and billing information to one or more customers (see Mercier pg.2 par 14-15; pg.3-4 par 39). The same motivation was utilized in claim 4 applied equally well to claim 5.

As regarding claim 6, Davies-Mercier-Todd discloses the host computer and the storage subsystem are connected directly by physical and logical connections made between at least one of a plurality of host I/O controllers and at least one of a plurality of subsystem I/O ports via a SAN switch (see Davies pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1, SAN switch act as the middle man

between the clients and the network storage system, network storage system included the host controller and the storage RAIDS).

As regarding claim 7, Davies-Mercier-Todd discloses wherein the physical and logical connections are made by zoning definitions between ports in the SAN switch connectable to the at least one of a plurality of subsystem I/O ports of the storage subsystems and the at least one of a plurality of host I/O controllers of the host computers (see Davies pg.3, par 28-29; pg.4, par 31-36, 38-41, LUN zoning).

As regarding claim 8, Davies-Mercier –Todd discloses wherein the SAN switch comprises at least one of a fibre channel network switch, an IP switch (see Davies pg.3, par 28-29; pg.4, par 31-36, 38-41, fiber channel network).

As regarding claim 9, Davies-Mercier-Todd discloses wherein one or more host computers of one or more customers are connected to one or more storage subsystems of one or more vendors via the SAN switch of a first vendor that makes at least one connection between at least one host I/O controller of the one or more host computers and at least one subsystem I/O ports of the one or more storage subsystems (see Davies pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, plurality of host computer connected to the network storage system via SAN switch, the network storage system have plurality of RAIDS storage subsystem).

As regarding claim 10, Davies-Mercier-Todd discloses wherein the SIoD center system of a second vendor tracks port connection information for preparing billing and/or payment information for customers and/or vendors (see Mercier pg.2 par 14-15; pg.3-4 par 39, also see figure 4, the management station monitoring and tracking the

connection between servers, switches, and storage disk array). The same motivation was utilized in claim 4 applied equally well to claim 10.

As regarding claim 1 and 20 Davies discloses method for controlling a service at a center system, wherein via a network, the center system is connected to a host computer, a storage subsystem and a switch whose ports are physically connected to an I/O controller of the host computer and ports of the storage subsystem, the method comprising (see Davies pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1, SAN switch act as the middle man between the clients and the network storage system, network storage system included the host controller and the storage RAIDS): receiving a request for establishing a logical data I/O path between the host computer and the storage subsystem via the switch (see Davies pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1, SAN switch act as the middle man between the clients and the network storage system, network storage system included the host controller and the storage RAIDS); directing the switch and the storage subsystem to assign at least one port for the logical data I/O path (see Davies pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1, SAN switch act as the middle man between the clients and the network storage system, network storage system included the host controller and the storage RAIDS);

Davies does not expressly disclose making account information based upon at least the number of ports assigned at the switch.

Mercier teaches making account information based upon at least the number of ports assigned at the switch (see Mercier pg.2 par 14-15; pg.3-4 par 39). The same motivation was utilized in claim 4 applied equally well to claim 1 and 20.

The combination of Davies and Mercier does not disclose the storage on demand.

Todd, on the other hand, teaches storage on demand (see Todd pg.3, par 0029).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to combine incorporate the storage on demand of Todd to the method of Davies-Mercier, because by having the storage on demand would allow allocating resource in a controlled fashion, fully utilizing the resources (see Todd pg.3 par 0029).

As regarding claim 2, Davies-Mercier-Todd discloses wherein the account information is made from the number of ports assigned at the storage subsystem (see Mercier pg.2 par 14-15; pg.3-4 par 39). The same motivation was utilized in claim 4 applied equally well to claim 2.

As regarding claim 3, Davies-Mercier-Todd discloses sending a message to the storage subsystem to request storage resources (see Davies pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1, SAN switch act as the middle man between the clients and the network storage system, network storage system included the host controller and the storage RAIDS); receiving from the storage subsystem a result, the result indicating whether storage resources have been successfully allocated in accordance with the message (see Davies pg.3, par 28-29;

pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1); sending a message to a SAN switch to request an I/O path between a host computer requesting storage and the storage subsystem (see Davies pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1); receiving from the SAN switch a result, the result indicating whether the I/O path has been successfully established in accordance with the message (see Davies pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1); and updating account information based upon results received from the storage subsystem and the SAN switch (see Davies pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1).

As regarding claim 11, Davies discloses means for receiving a request for storage (see Davies pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1); means for establishing at least one logical connection between a user of storage and a provider of storage responsive to the request (see Davies pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1); means for determining a number of resources allocated to establish the logical connection (see Davies pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1).

Davies does not disclose means for tracking account information for at least one of the user of storage and the provider of storage.

Mercier discloses means for tracking account information for at least one of the user of storage and the provider of storage (see Mercier pg.2 par 14-15; pg.3-4 par 39). The same motivation was utilized in claim 4 applied equally well to claim 11.

The combination of Davies and Mercier does not disclose the storage on demand.

Todd, on the other hand, teaches storage on demand (see Todd pg.3, par 0029).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to combine incorporate the storage on demand of Todd to the method of Davies-Mercier, because by having the storage on demand would allow allocating resource in a controlled fashion, fully utilizing the resources (see Todd pg.3 par 0029).

As regarding claims 12-14, the limitations are similar to limitations of claims 5-10, therefore rejected for the same rationale as claim 5-10.

As regarding claim 15, Davies discloses receiving a request for establishing a logical data I/O path between a requestor of storage and a provider of storage (see Davies pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1); directing a request for a connection between the requestor of storage and the provider of storage to a provider of switching connections (see Davies pg.3, par 28-29; pg.4, par 31-36, 38-41, pg.5, par 45-52; pg.6, par 53-56, also see Fig.1).

Davies does not disclose making account information based upon at least a number of ports assigned in making the connection.

Mercier teaches making account information based upon at least a number of ports assigned in making the connection (see Mercier pg.2 par 14-15; pg.3-4 par 39). The same motivation was utilized in claim 4 applied equally well to claim 15.

The combination of Davies and Mercier does not disclose the storage on demand.

Todd, on the other hand, teaches storage on demand (see Todd pg.3, par 0029).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to combine incorporate the storage on demand of Todd to the method of Davies-Mercier, because by having the storage on demand would allow allocating resource in a controlled fashion, fully utilizing the resources (see Todd pg.3 par 0029).

As regarding claims 16-19 the limitations are similar to limitations of claims 5-10, therefore rejected for the same rationale as claim 5-10.

Response to Arguments

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duyen M. Doan whose telephone number is (571) 272-4226. The examiner can normally be reached on 9:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob A. Jaroenchonwanit can be reached on (571) 272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner
Duyen Doan
Art unit 2152

BUNJOB JAROENCHONWANIT
SUPERVISORY PATENT EXAMINER